



STATE OF IDAHO

THE OBJECTIVES

STATE WATER PLAN — PART ONE

JUNE, 1974

STATE OF IDAHO

CECIL D. ANDRUS
Governor

"There shall be constituted a State Water Resource Agency composed as the Legislature may now or hereafter prescribe which shall have power to formulate and implement a state water plan for optimum development of water resources in the public interest . . . "

Constitutional Amendment

IDAHO WATER RESOURCE BOARD

C. Stephen Allred, *Director*

BOARD MEMBERS

John F. Streiff, *Chairman*

George L. Yost, *Vice Chairman*

Ferris M. Kunz

Joseph H. Nettleton

Scott W. Reed

Donald R. Kramer

Franklin Jones

Edwin C. Schlender

R. Keith Higginson

RESOLUTION TO ADOPT

MAY 1974

WHEREAS, the Idaho Water Resource Board is charged with the task of formulating a coordinated, integrated water policy for the state;

AND WHEREAS, the Board did give the August 17, 1973, a preliminary resolution for the adoption of the Idaho Water Policy and the Board's report to implement that policy;

AND WHEREAS, the Board adopted the statement of planning objectives as contained in the report and the Board is committed to the purpose of the Idaho Water Policy;

NOW, THE BOARD, OF IT 1974-1975, the Board decided the Idaho Water Policy as adopted as necessary the water resource plan, to be followed in accordance of the Idaho Water Plan.

BE IT ENACTED BY THE BOARD, that the Board, in its continuing charge with the water resource plan, shall be considered as being a part of the Idaho Water Policy and the Board shall continue to work toward the Idaho Water Policy and the Idaho Water Resource Board, in accordance with the Idaho Water Policy.

THE OBJECTIVES

Part I of the STATE WATER PLAN

John F. Steff
John F. Steff, Chairman

Donald R. Jones
Donald R. Jones, Secretary

Barbara M. King
Barbara M. King, Secretary

Scott W. Reed
Scott W. Reed

George F. Ladd
George F. Ladd, Secretary

David R. Jones
David R. Jones, Secretary

John H. Dutton
John H. Dutton, Secretary

Edmund C. Schneider
Edmund C. Schneider

JUNE 1974

Third Printing - April 1975

IDAHO WATER RESOURCE BOARD
STATEHOUSE
BOISE, IDAHO

RESOLUTION TO ADOPT

MARCH 8, 1974

WHEREAS, the Idaho Water Resource Board is charged with the task of formulating a coordinated, integrated, multiple-use water resource policy, and

WHEREAS, the Board did approve on August 17, 1973, a planning procedure for the preparation of an Objectives Report and Basins Reports to implement this policy, and

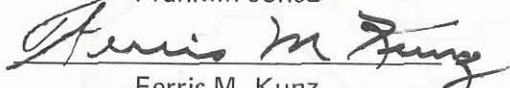
WHEREAS, the Board endorses the statements of planning objectives as contained in this report and desires to make these expressions available to guide the public, other governmental agencies, and the Board staff in formulating a state water resource plan,

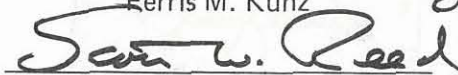
NOW, THEREFORE, BE IT RESOLVED, that this report entitled *The Objectives, Part I of the State Water Plan* be adopted as expressing the water resource policy to be followed in preparation of the State Water Plan.

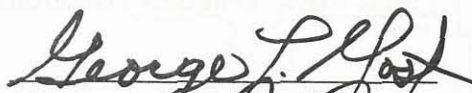
BE IT FURTHER RESOLVED, that the Board, in recognition of constantly changing economic and environmental conditions which must be considered in establishing a state water resource policy, will review these planning objectives annually or upon formal request to determine if revisions in the state water resource policy are warranted.

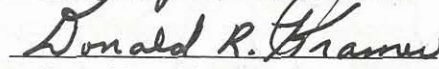

John F. Streiff, Chairman

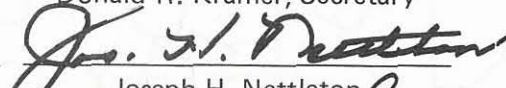

Franklin Jones



Ferris M. Kunz


Scott W. Reed


George L. Yost, Vice-Chairman


Donald R. Kramer, Secretary


Joseph H. Nettleton


Edwin C. Schlender

MAJOR STUDY BASINS

1. Panhandle

2. Snake River

3. Bear River

¹ Includes Kootenai, Clark Fork and Spokane drainages.

² Includes Salmon and Clearwater drainages.

³ Includes Deep Creek drainage.



FOREWORD

The Objectives is the first of a series of documents which will comprise the State Water Plan. The purpose of the report is to identify and define the policies and objectives which the Idaho Water Resource Board has adopted to govern the planning, development, and conservation of the state's water and related lands.

The projects and programs necessary to implement the objectives will be identified and evaluated for each major river basin and presented in separate basin reports. Basin reports will be prepared for the Panhandle basins, Snake River basins, and Bear River basins. These three major reports, to be completed by 1977, and *The Objectives*, will constitute the Idaho State Water Plan.

The objectives presented in this report are responsive to public input obtained through public information meetings, public hearings, and public opinion surveys which had been conducted after the Interim State Water Plan report was published. Board members, in adopting these objectives, have considered the complex inter-relationship of economic, social, and environmental factors. Legal and institutional restraints were also considered.

The State Water Plan will serve as a valuable guide to Idaho citizens and public officials. It will help to insure that decisions made regarding the state's water and related land resources are compatible and will be designed to help meet present and future water needs.

COVER PHOTO: Redfish Lake in Stanley Basin lies in the valley of the Sawtooth Mountains in central Idaho. (Photo courtesy of Marshall Edson)

PHOTO CREDITS: Bureau of Reclamation — 29, 34; Commerce and Development — 2, 20, 22, 32, 36, 38; Corps of Engineers — 18 (inset); Fish and Game — 9, 16, 23, 24, 39, 40; Forest Service — 28; Idaho Power Co. — 11, 26, 30; Portland and General Electric Co. — 18; Union Pacific Railroad — 35; Water Resource Board — 16.

CONTENTS

Introduction . . . 1

Resources . . . 3

The Objectives

Beneficial and efficient water use . . . 15

Electric energy . . . 17

Environmental quality . . . 19

Erosion and sedimentation . . . 21

Fish and wildlife . . . 23

Fish farming (Aquaculture) . . . 25

Flood damage reduction . . . 27

Food and fiber (Agriculture) . . . 29

Indian lands and related water resources . . . 31

Interbasin water transfer . . . 33

Recreation . . . 35

State-federal rights . . . 37

Wild and scenic rivers . . . 39

TABLES

1. Land use, 1970 . . . 4

2. Labor force and employment trends, 1963-1973 . . . 13

FIGURES

1. Percentage of land use . . . 4

2. Mean annual runoff . . . 5

3. Streamflow variations . . . 7

4. Population growth . . . 10

INTRODUCTION

INTRODUCTION

In November 1964, Idaho voters approved a constitutional amendment providing for creation of a state water resource agency. The new section of the Constitution said in part . . .

"There shall be constituted a water resource agency which shall have power to formulate and implement a state water plan for optimum development of water resources in the public interest. To construct and operate water projects under such laws as may be prescribed by the Legislature."

The 38th Legislature in March 1965, enacted legislation establishing the Idaho Water Resource Board. The first section of the legislative act stated the objectives . . .

"The welfare of the people of this state is dependent on conservation, development and optimum use of our water resources. To achieve this objective and protect the waters of Idaho from diversion out of state, it is essential that a coordinated, integrated, multi-use water resource policy be formulated and a plan developed to activate this policy as rapidly as possible."

In carrying out the responsibilities set forth in the constitutional amendment, and the legislation establishing the Idaho Water Resource Board, many studies and investigations have been conducted and reports issued. In July 1972, the *Interim State Water Plan, Preliminary Report*, was released for review. That report presented data and information regarding the

state's natural resources and discussed the major policy issues involved in formulating the State Water Plan. Numerous public information meetings were held across the state; and in February and March of 1973, formal hearings were held on the Interim State Water Plan report. Substantial amounts of information and opinions were presented during the public meetings and hearings relating to what citizens thought should become the policies and goals of the State Water Plan. Public opinion surveys were conducted in the fall of 1972 and 1973, to gain further information about what Idahoans wanted from their State Water Plan.

The objectives herein address the most critical questions as expressed currently by Idaho citizens. As opinions and attitudes of the public change, these objectives must also change from time-to-time to reflect those majority opinions.

This report, *The Objectives*, along with the river basins reports, will comprise the Idaho State Water Plan. The Basins Reports will identify and evaluate projects and programs necessary to implement *The Objectives*. Reports for all of the river basins "The Panhandle Basins," "Snake River Basins," and "Bear River Basins" will be completed by January 1977.

The purpose of *The Objectives* is to clearly identify, for the public, other agencies, and those involved in the state water planning process, the planning objectives which the Idaho Water Resource Board has adopted as state

water policy. Although statewide objectives must be general in nature, they will give guidance to those concerned in completing detailed plans for each basin, or a project.

The basin plan formulation process will display all known beneficial and adverse effects of any proposal presented. It is realized that no one plan will satisfy all needs and desires. Elements of these plans will be described in layman's language.

Workshops will be held throughout the basin under consideration so that citizens may participate to select the elements which they

feel will best serve the interests of Idaho. Local governmental units and regional groups will be asked to participate. Staff planners will then utilize that information in formulating the final basin plan.

As competition for Idaho's resources increases, it is imperative that Idaho citizens participate in deciding how best those limited resources can be used. The State Water Plan can then act to help or develop the resources to meet present or future needs. Whenever possible, a full range of alternatives shall be preserved for future decisions. Objectives described in this report provide the framework for this effort.

Heavily wooded Beauty Bay on Lake Coeur d'Alene in north Idaho has been a popular recreation area for many years. In June, syringa . . . the state flower . . . blooms in profusion.



RESOURCES

RESOURCES

The natural assets of the state include: land, surface and ground waters, fish and wildlife, forest and minerals. In a special resource category are the people of Idaho. Virtually all of these resources have common interests, are interdependent, and must be recognized perspective in planning for any one resource.

Idaho, in comparison with many other states, has large quantities of undeveloped resources. Time has been particularly kind in evolving a geological area of rich mineral deposits, timbered mountains and generous watersheds. Wilderness areas provide another kind of wealth to Idahoans and the Nation.

Elevations range from over 730 feet to 12,662 feet above sea level. The Clearwater Mountains form the largest concentrated range, extending 125 miles from the St. Joe River south to the Salmon River. A 14,000-square-mile plain, part of the Columbia Plateau, extends in a crescent across southern Idaho from east to west and is traversed by the Snake River; it overlays one of the largest aquifers in the world. Of more than 2,000 lakes, Coeur d'Alene, Pend Oreille and Priest lakes, located in the Panhandle, are the largest.

The state's major river systems, the Snake, Salmon, Clearwater, Clark Fork-Pend Oreille and Bear, all follow courses that have been influenced by their surrounding topography. The course of the Snake River in southern Idaho

was altered by lava flows that poured across the land surface many times. While this was occurring, the entire Snake River plain was undergoing an extensive downwarping, or subsidence. In the mountainous area of central Idaho, a general uplift caused the major streams to accelerate their downcutting and carve deep canyons.

Topography more than latitude determines Idaho's varied climate. Located on the western slope of the Continental Divide and exposed to Pacific winds, the area has a milder climate than might be expected from its geographical position. The Divide also acts as a barrier to the severe cold spells from the Canadian-Prairie provinces.

The state record low temperature is -60 degrees F. occurring at Island Park Dam (eastern Idaho) in January 1943; the high is 118 degrees occurring at Orofino (northern Idaho) in July 1934. Monthly means hit 32 degrees, or below, for 5 months of the year at elevations of 5,000 feet or above; and for only one or two months below 3,000 feet. The Lewiston area has an average 200-day frost-free season. The basins of the central Snake, lower Boise, Payette and Weiser rivers have a frost-free period of 150 to 180 days a year — a 125-day season is common

near Pocatello and Idaho Falls. Higher mountain valleys often average less than one month per year without freezing temperatures.

Precipitation levels differ greatly because of the topography. Large areas in the mountain portions of the Clearwater, Payette, Boise, Salmon, and Priest river basins receive from 40 to 50 inches of rainfall annually, while some arid plains in southern Idaho record less than 10 inches. Challis (Custer County) has the lowest recorded average annual precipitation of 7.09 inches and Deadwood Summit (Valley County) has the highest of 98.6.

LAND

Land area of Idaho is 52,910,000 acres — about that of Great Britain.

Ownership is an important factor affecting land use and management. About 64 percent of Idaho area is owned by the federal government. Private interests own about 30 percent and almost 6 percent is owned by state and local communities. The Forest Service and the Bureau of Land Management are the dominant governmental land holders — with over 96 percent of the total federal lands.

The 1970 acreages of land use are given in Table 1; they are illustrated by percentages in Figure 1.

WATER

Idaho is fortunate to have significant quantities of both surface water and groundwater.

Runoff of the principal streams is illustrated in Figure 2. Relative mean annual runoff is based on streamflow records of 1929 to 1958, adjusted to reflect the 1970 level of development. The pattern and magnitude of seasonal flows of the Snake River and many of its tributary streams are affected greatly by storage facilities, diversions and return flows from irrigation. In dry years, flows of many southern Idaho streams are almost entirely diverted.

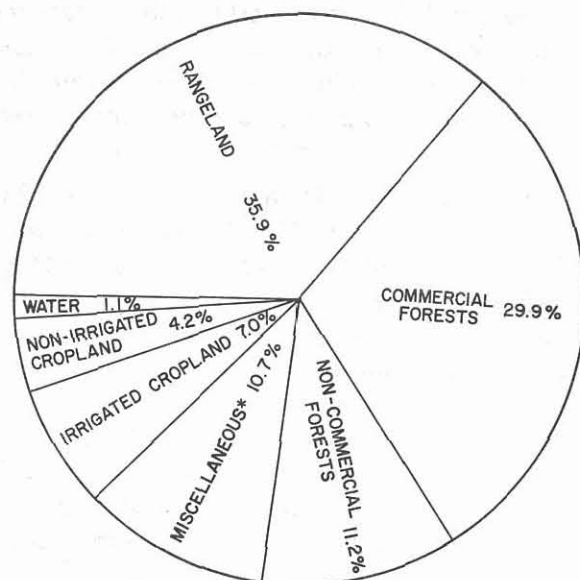
TABLE 1
LAND USE, 1970

USE	Acres (Approx.)
Cropland, irrigated	3,750,000
Cropland, nonirrigated	2,250,000
Forests, commercial	16,000,000
Forests, noncommercial	6,000,000
Rangeland ¹	19,200,000
Miscellaneous urban, road, waste-lands, escarpments, and other	5,710,000
Total land	52,910,000
Water area	565,000
Total land and water	53,475,000

¹U.S. Census of Agriculture 1964 to reflect 1970 conditions.

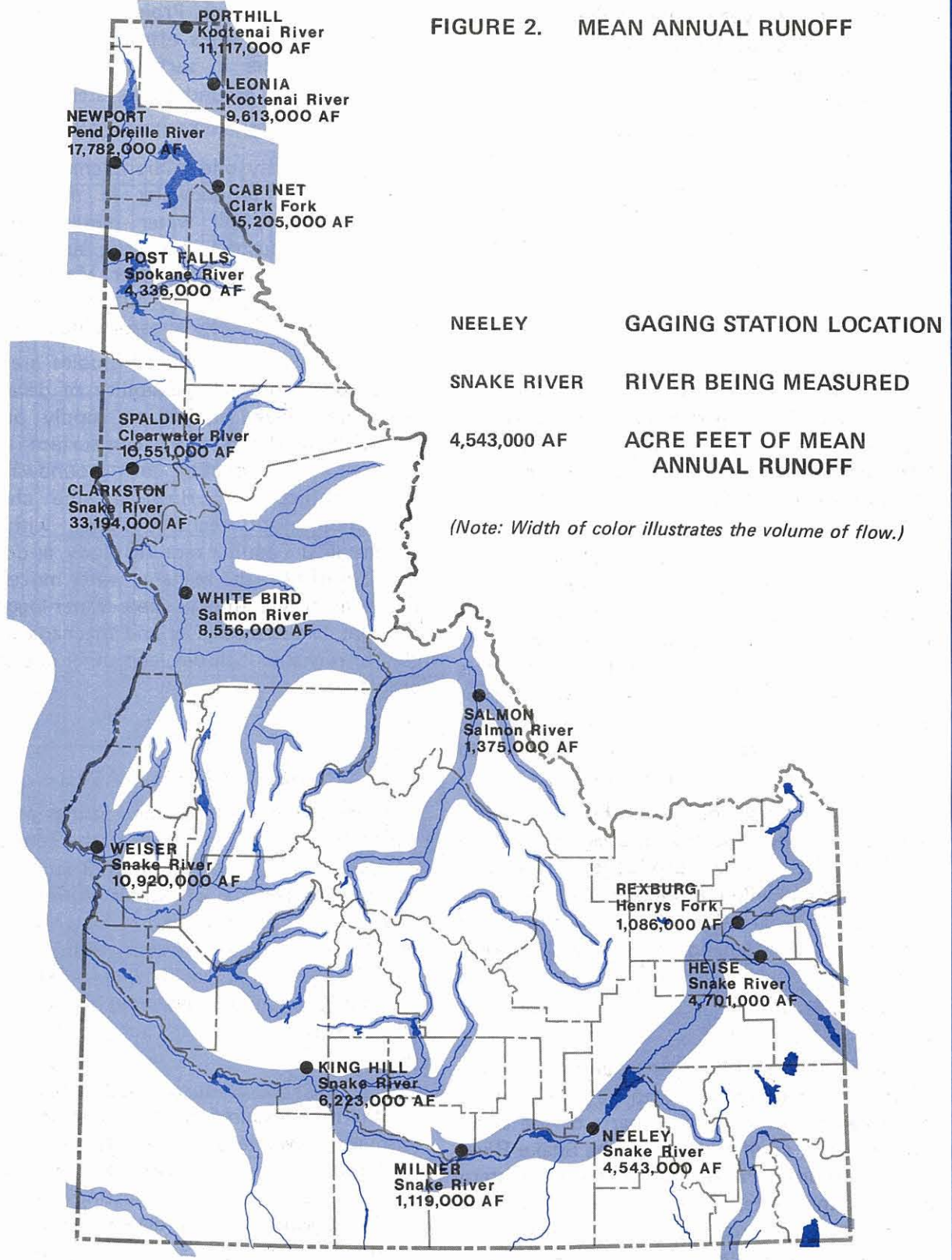
Source: 1968 Idaho Water Resources Inventory, Table 1, Page 9.

FIGURE 1. PERCENTAGE OF LAND USE



* MISCELLANEOUS: URBAN, ROADS, WASTE LANDS, ESCARPMENTS, OTHERS.

FIGURE 2. MEAN ANNUAL RUNOFF



To determine water availability under present levels of development, records of runoff covering many years are adjusted to a comparable level of water-supply development and water use. Adjusted streamflows in cubic feet per second (cfs) are shown in Figure 3 for the Snake River. Comparable flows are simulated graphically for the Coeur d'Alene and Clearwater. This figure also demonstrates the wide variations in annual flows: 1931 and 1937 were "dry" years and 1943 and 1956 were years of abundant water.

Natural lakes occur mostly in the central mountainous area; the largest, however, is north Idaho's Pend Oreille with 148 square miles of surface area. The largest man-made reservoir is behind Dworshak Dam. This lake is 53 miles long, has a surface area of 17,000 acres and contains 3.468 million acre-feet of water when full.

A number of natural lakes are regulated within prescribed limits by outlet dams, and thus provide a certain amount of storage water that can be released as desired. Included in this category are Payette, Bear, Coeur d'Alene, Priest and Pend Oreille lakes. A Wyoming lake, Jackson Lake, was constructed primarily to provide water for irrigation in Idaho.

Many large reservoirs were built as multi-purpose, having allotted spaces of storage amounts for power production, irrigation supply, fish and wildlife, flood control and other purposes. The operation criteria established for each reservoir is dependent upon the purposes authorized for the project and the relative priorities assigned.

The overall groundwater sources of Idaho have barely been tapped although over-development has occurred in some parts of the state. The principal aquifers occur in the Snake River Plain, Rathdrum Prairie, and along the western side of the state. Over-development of the groundwater resource has occurred in the Raft River Valley, the Blue Gulch area west of Twin Falls, and in a portion of the Goose Creek drainage south of Burley.

Groundwater provides for the flows of springs — Thousand Springs for example — and to lakes, reservoirs and streams. Projects and uses which influence groundwaters often affect the surface systems. Changes in surface systems likewise affect associated groundwater systems.

Approximately one million acres of land are irrigated with groundwater in the state. In addition, nearly all water requirements for municipal, industrial, domestic and livestock uses are met from groundwater. Many uses have nearly constant demands; but the largest use, irrigation, has primarily a seasonal demand.

Various state and federal studies are being made to explore the possibility of developing the Snake Plain aquifer to supply pumped irrigation water and store excess surface flows as recharge. The quality of groundwater is generally excellent. However, the chemical compatibility of recharge water with that already in the aquifer requires study, as does the problem of how the recharge water moves from the original site, the possible water-logging of adjacent lands, biological and mechanical plugging of recharge facilities, and other operational problems.

GEOTHERMAL WATER

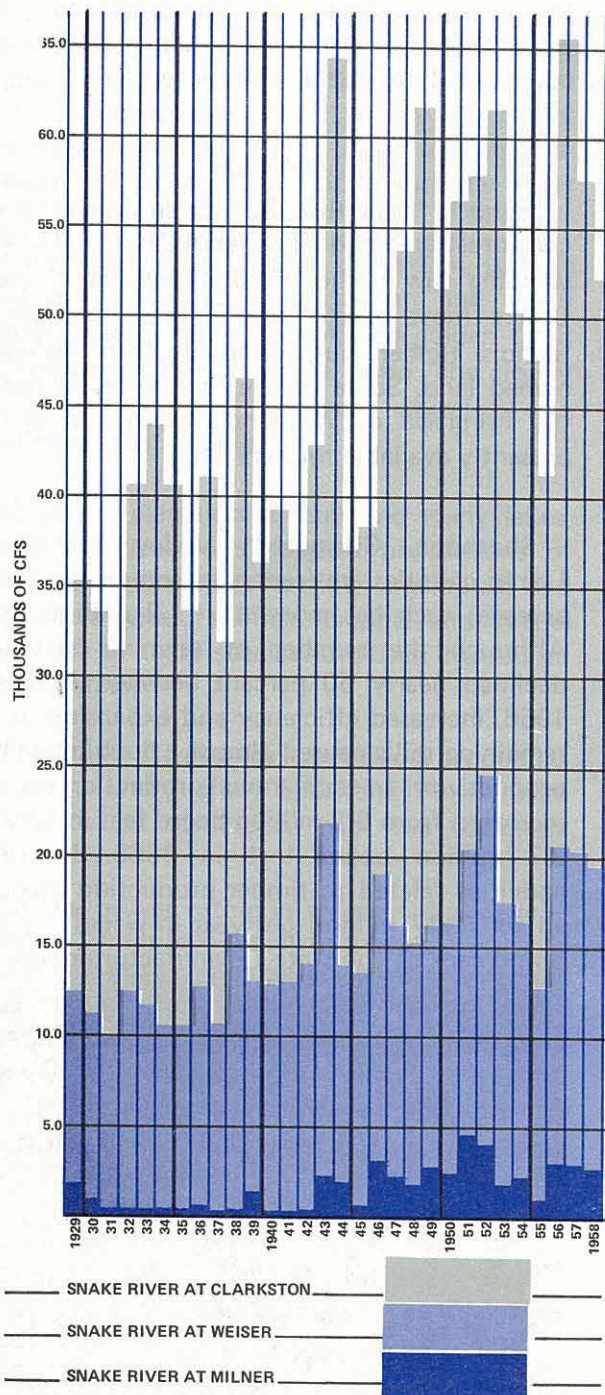
There are at least 380 hot springs and wells which have been identified in the central and southern parts of Idaho. A 1973 study of the Idaho Department of Water Administration inventoried 124 of these hot water sources as possible geothermal resource sites. That study identified 25 areas as having potential geothermal possibilities based upon geochemical investigations.

The Idaho legislature has declared that the geothermal resource of the state is a public resource. Laws have been enacted to control the development of geothermal resources within the state and to provide for the leasing of state lands for geothermal resource development purposes.

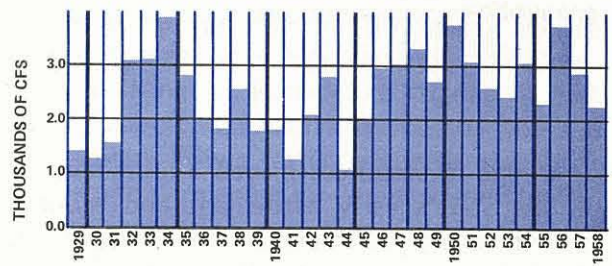
The federal Geothermal Act of 1970 provides for the classification of public lands valuable for geothermal steam and associated geothermal

FIGURE 3. STREAMFLOW VARIATIONS
(RECORDED 1929 THROUGH 1958)

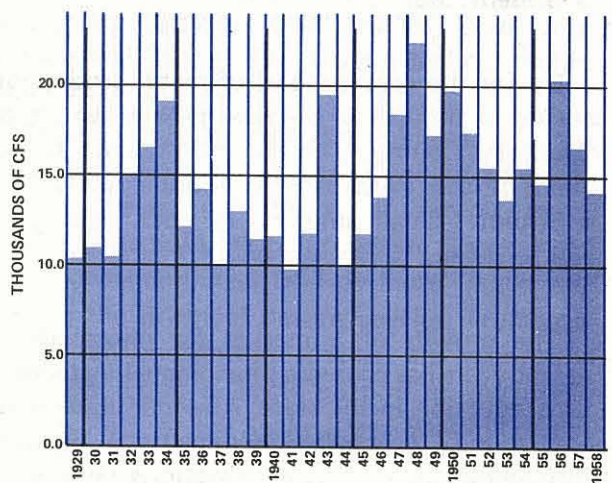
SNAKE RIVER AT THREE LOCATIONS



COEUR D'ALENE RIVER AT CATALDO



CLEARWATER RIVER AT SPALDING



resources. Land so classified is reserved in federal ownership. Classification assists the Department of the Interior to determine which lands are within the "known geothermal resource area" (KGRA) and thus subject to the competitive leasing provision of the act. Two areas in Idaho totaling 21,800 acres have been classified as KGRA; one is in the Raft River Basin and the other close to Yellowstone National Park in eastern Fremont County. There are also large state-owned land areas within the known geothermal areas.

Potential uses for geothermal water include power generation, space heating, raising certain kinds of crops and fish, recreation and mineral production.

MINERALS

Mining of resources played a prominent role in the state's early settlement and economic growth. Many metal deposits which dominated the industry's early years still produce valuable yields. Idaho leads the nation in silver production; the state produces major amounts of lead and zinc. Remaining deposits of these three metals should allow continued production at present rates.

By far the greatest part of metal production occurs in the Coeur d'Alene mining district of Shoshone County. The region is famous for its yields of lead, silver, zinc, and copper, but it also contributes small amounts of gold, antimony, and tungsten.

The growth of a market for phosphate in recent years has caused a phenomenal increase in its production in the state. Abundant quantities are found in bedded sedimentary deposits throughout the southeastern sections. Gypsum is utilized as a fertilizer and in construction; it is found mainly along the Snake River north of Weiser.

Construction minerals include limestone and shale, mica, pumice, cement, sand and gravel, perlite, stone (especially basalt), clay and volcanic cinder. Uranium deposits are found in

several locations, but only the deposit near Stanley has been actively mined.

Beryllium has been discovered in several places in Idaho. The largest deposit is in the Sawtooth Mountains northwest of Sun Valley. Other minerals found are titanium, antimony, mercury, tungsten, cobalt, thorium, columbium-tantalum, vanadium and cadmium. Among the 72 varieties of Idaho stones are agates, jasper, opals, sapphires, rubies and garnets.

TIMBER

Idaho is fifteenth nationally in total commercial forest area and fifth nationally in volume of standing saw timber (115 billion board feet). Unlike most other states, more than half of Idaho's timber output comes from federally owned land. Some of the federal forest lies in the Primitive or Wilderness areas and is not presently available for harvest.

Shoshone, Clearwater, Valley, Idaho and Lemhi counties are leaders in commercial forest acreage; each has more than 1.2 million acres. Although the number of sawmills statewide declined nearly 50 percent between 1956 and 1966, increased efficiency and expansion in the remaining mills caused almost a doubling in mill productivity. In-state annual production per mill increased from 5.2 million board feet in 1956 to 9.7 million board feet in 1966. In 1971, activities related to timber production accounted for \$117 million per year in wages — about 36 percent of the state's manufacturing payroll.

Commercial forest trees are primarily conifers, with softwoods harvested predominating over hardwood in a ratio of 2,000 to 1. Douglas fir, true firs, and white and ponderosa pine are among the most commercially significant native trees.

FISH AND WILDLIFE

Anadromous fish in Idaho waters include chinook salmon, steelhead trout and sockeye salmon. These fish now spawn only in the Salmon and Clearwater river drainages in Idaho and in the Snake River below Hells Canyon. Dam developments on the Boise and Payette

rivers and construction of the Hells Canyon Dam complex on the Snake block fish passage. Snake River salmon and steelhead runs have been successfully transferred to the Salmon River drainage.

Trout and char are more highly regarded by most anglers than other resident fish. Rainbow, most numerous and widely distributed of the trout species, live in lakes and streams in every region. Large numbers are raised commercially on trout farms. State, federal, and private power company hatcheries supply Idaho streams with millions of trout each year to provide sport fishing.

Other native, coldwater game fish include cutthroat trout, kokanee salmon and Dolly Varden. Lake, eastern brook and golden trout species were all imported to Idaho. The closely related grayling and mountain whitefish also require coldwater habitat.

Most low elevation streams and many lakes, ponds and reservoirs support populations of warmwater game fish: catfish, largemouth and smallmouth bass, sunfish, crappie and yellow perch. All of these species have been introduced into the state.

The Snake River once supported a productive sturgeon fishery from Shoshone Falls downstream to its confluence with the Columbia

River. The sturgeon population has declined drastically; construction of major dams throughout the Columbia system has curtailed sturgeon migratory habits.

Non-game species are found in most of the waters capable of supporting fish life. Some compete with or prey upon game species. Principal species included in this category are squawfish, carp, tench, and several species of chub and suckers.

Idaho's big game resources include populations of elk, moose, white-tailed and mule deer, big horn sheep, mountain goat, black bear, grizzly bear, pronghorn antelope and mountain lion.

The many varieties of fur-bearing animals include beaver, muskrat, raccoon and mink. Animals living in semi-desert regions include badger, bobcat, coyote, skunk, weasel, fox and jack rabbits. River otter occur in the more remote and permanent mountain streams. Lynx, marten, wolverine and fisher are found in primitive mountain areas.

The state supports many species of upland game — some are native and some were introduced: ring-necked pheasant; Hungarian and chukar partridge; bobwhite; mountain, valley and Gambel quail; ruffed, blue, sage, spruce and sharp-tailed grouse; turkey; rabbits and hares.

Most species of waterfowl common in the western United States are found in Idaho at various times of the year. Canada geese, mallards, gadwall, pintail, baldpate, blue-winged teal, cinnamon teal and redhead ducks are among the principal nesting species. Trumpeter swans, an endangered species, are year-round residents along a small portion of the upper Henrys Fork of the Snake River. Sandhill cranes are visitors to Grays Lake, Swan Valley and other marshland areas of southeastern Idaho.

Other forms of wildlife found include the bald and golden eagle; prairie falcon; ferruginous hawk; American osprey and several species of owls, gulls and blackbirds and over 100 species of song and insectivorous birds.

Mature beaver eating in sedges and aquatic plants blends into his environment.



POPULATION

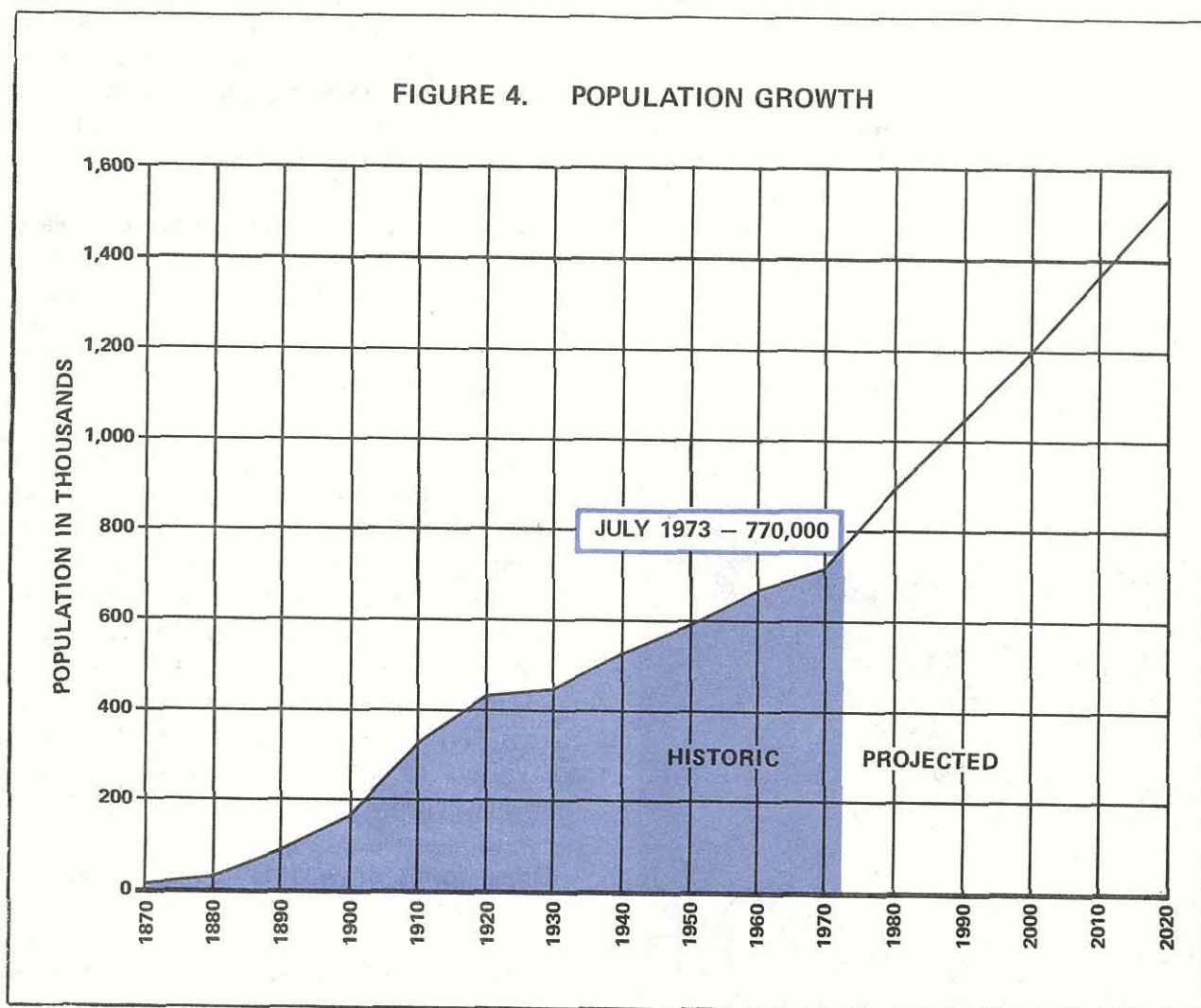
Historic growth has been spurred or checked by economic necessity and followed whatever current development of natural resources prevailed in Idaho. Trapping, mining and agriculture — each in turn provided impetus to growth. In the 1940s, factories and war plants in other states drew people out of the state. Except for the 1920s, the 1960s were the decade of slowest recorded population growth.

Between 1960 and 1970, net out-migration was 41,241 people. Only 10 counties gained population through net in-migration: Nez Perce, Latah, Kootenai, Boundary, Clearwater, Ada, Boise, Blaine, Power and Madison. The remaining 34 counties experienced varying degrees of

population out-migration. Total population change was a gain of 45,817. Recent data indicates that the trend of losses through out-migration in this previous decade are reversing in the '70s.

Recreational developments, educational facilities, construction activities have contributed to the growth patterns. Figure 4 charts population growth from 1870 and projects these patterns into the next century.

Increasingly uneven spatial distributions of populations are evolving: the more densely populated counties continue to gain residents, while many sparsely populated areas are experiencing continued low growth rates or population losses. The Snake River basin has the





Cutters bend to cut cheese free from a vat. Idaho's dairy industry produces \$82.4 million in value and has been a definite factor in placing agriculture first of major state industries.

greatest density and illustrates the importance of the river to population distribution: the 21 counties bordering the river contain 74 percent of Idaho's total population. These counties also accounted for 90 percent of growth during the past decade.

In 1940, 66.3 percent of the population was rural and 33.7 percent urban. The 1970 census report reversed the balance: 54.5 percent was urban and 45.5 was rural. Fourteen counties

have no cities with more than 2,500 people and of these, six have no town containing more than 1,000 people. Population density averages 3.6 persons per square mile in Idaho compared to 56.3 for the continental United States, and 22.2 for the Pacific Northwest.

Census information to mid-1973 indicates that Idaho's population has made some dramatic increases. There has been a reversal from the previous out-migration and growth has jumped dramatically in several areas. The movement

appears to be primarily to cities such as Boise, Idaho Falls, Coeur d'Alene, Twin Falls and Pocatello. The Big Wood River, Salmon River and Island Park areas have experienced a mushroom growth during the past two years.

The best estimates now are that Idaho's population has increased as much in the last 2½ years as it had in the previous ten years, showing 755,000 for July 1972, and 770,000 for July 1973. Estimates indicate growth in Idaho as ninth among the 50 states since 1970. Of the top 10 states, all but 2 are on, or west of, the Continental Divide.

ECONOMY

Idaho's economy developed in four stages covering a relatively short period of time: fur trade, mining, grasslands ranching and irrigated agriculture. The recorded trends encompassed time from the 1820s through 1890, when agriculture became the largest in-state employer and has since held the lead. Idaho is second only to California among the 11 western states in irrigated acreage. Leading crops and dollar values (1973) are: potatoes, \$205.5 million; barley, \$102.1 million; alfalfa hay, \$198.2 million; and wheat, \$209.7 million. Others (1972) are: fish-farming (aquaculture), \$35 million; cattle and calves, \$273.7 million; milk, \$82.4 million; and sugar beets, \$59.1 million. The 1973 total value of Idaho's more important crops excluding sugar beets was \$886 million — a record high. This value is 64 percent above 1972 levels.

Timber harvest is estimated at 1,868.6 million board-feet in Idaho in 1973. Harvest was up .6 percent over 1972 figures. The industry has increasingly made use of former waste products by creating laminated boards, plywood, wood pulp, chips, soil-aid and decorative bark.

New industries (mobile homes and recreational vehicles) and increased tourism, in addition to federal installations (nuclear reactors and military bases) have contributed to diversification of the economy in the past three decades. There has been a recent expansion of the mobile home industry in southwestern Idaho.

Potential industrial growth may occur in furniture and fixtures, stone, clay, glass, primary metal, fabricated metal products, and apparel.

EMPLOYMENT

Statistics reflect a changing employment picture in Idaho. During the period 1963 to 1973, the agricultural employment force declined 27.7 percent; non-agricultural rose 39.1 percent; state and local government rose 61.3 percent; and federal government increased 7.5 percent. Manufacturing employment increased 16,900 during the 10-year period for a total in 1973 of 47,300 or an increase of 55.6 percent. Non-manufacturing employment, excluding agriculture increased 48.1 percent.

Total labor force comprised 42.9 percent of state population in 1973, with 330,000 employed. Projections for 1980 estimate a total force of 385,000, an increase of 55,000 over 1973 levels.

Idaho employment trends and a categorical breakdown of employment are listed in Table 3.

PERSONAL INCOME

Idaho residents gained 83.2 percent between 1958 and 1969 compared to a national personal income gain of 108.1 percent. Regionally, the upper Snake basin residents gained 41.4 percent of the state total and the Bear River basin residents gained the least in personal income — 1.9 percent. Average monthly personal income for 1972 was \$230 million compared to \$209 million in 1971 — a gain of 10 percent in Idaho.

Wages and salaries accounted for approximately 60 percent of Idaho personal income. Fifty-five percent of total personal income is derived from seven counties. Ada produces 17 percent; Bonneville, 9.3; Canyon, 8.2; Bannock, 6.8; Twin Falls, 5.9; Nez Perce, 4.4; and Kootenai, 4.2 percent.

Per capita national average income was \$3,705 in 1969; Idaho average was \$3,015 that year.

TABLE 2
LABOR FORCE AND EMPLOYMENT TRENDS, 1963 - 1973

Employment Category	1963	1973	Numerical Difference	Percent Change
Civilian labor force ¹	266,700	330,000	63,300	24
Unemployment	15,000	16,900	1,900	13
Percent of labor force unemployed	5.6	5.1	-.5	-9
Total employment	251,500	299,900	48,400	19
Agricultural	55,200	39,900	-15,300	-28
Nonagricultural	196,300	273,100	76,800	39
Self-employed & domestic	31,600	26,900	-4,700	-15
Wage & salary workers	164,700	246,200	81,500	49
Total manufacturing	30,400	47,300	16,900	56
Durable goods	15,600	25,700	10,100	65
Lumber, wood products ²	11,400	15,200	3,800	33
Stone, clay, glass products	800	1,200	400	50
Primary metal industries	1,000	1,500	500	50
Fabricated metal products	N/A	900	N/A	N/A
Machinery	N/A	900	N/A	N/A
Transportation equipment	N/A	3,500	N/A	N/A
Other durable goods	2,400	2,500	100	4
Nondurable goods	14,800	21,600	6,800	46
Food & kindred products	11,200	15,600	4,400	39
Paper & allied products	900	1,200	300	33
Printing, publishing & allied products	1,300	1,900	600	46
Chemical & allied	1,300	1,700	400	31
Other nondurable	100	1,200	1,100	1,100
Total nonmanufacturing	134,300	198,900	64,600	48
Mining	3,200	3,000	-200	-6
Contract construction	8,700	14,100	5,400	62
Interstate railroad	4,900	3,200	-1,700	-35
Other transportation	4,300	6,000	1,700	40
Communications	2,700	3,600	900	33
Electric, gas & sanitary services	2,300	2,700	400	17
Wholesale trade	8,600	13,700	5,100	59
Retail trade	31,900	47,200	15,300	48
Finance, insurance, real estate	6,600	10,000	3,400	52
Service & miscellaneous	23,400	39,600	16,200	69
Government, federal	9,300	10,000	700	8
Government, state & local ³	28,400	N/A	N/A	N/A
Government, state & local education	N/A	25,000	N/A	N/A
Government, state and local administration	N/A	20,800	N/A	N/A

¹Includes 100 involved in labor disputes

²Except furniture

³Includes education

N/A = Information not available

SOURCE: Idaho Manpower Review, January 1974, Dept. of Employment

THE OBJECTIVES

THE OBJECTIVES

Beneficial and efficient water use

OBJECTIVE: The policy of the Idaho Water Resource Board is to follow a broader definition of the term "beneficial use of water" to include all water uses, both consumptive and nonconsumptive (for example stream resource maintenance flows) and to seek implementation of those water resource projects and programs which provide for this definition through efficient water use practices.

The criteria by which the Board will evaluate water resource projects and programs as to whether they are in compliance with this objective are as follows:

1. All new water uses, both consumptive and nonconsumptive such as irrigation, municipal, industrial, power, mining, fish and wildlife, recreation, aquatic life, and water quality will be judged to have equal desirability as beneficial uses, except in some cases as may be affected by Article XV, Section 3 of the State Constitution.¹
2. When conflicts occur between meeting new water uses, the decision will be based on an evaluation of the beneficial and adverse environmental, economic, and social impacts.
3. Protection will be provided for all existing water rights as long as they are efficiently and beneficially used.

¹The Constitution provides a designation of preference between four uses: domestic, agricultural, manufacturing, and mining.

4. All projects and programs submitted for Board approval must be designed and operated to achieve maximum efficiency for water use that can reasonably be expected under current technology and in the public interest.
5. Priority will be given to projects and programs designed to help achieve more efficient use of water from existing systems.

DISCUSSION: The adoption of this objective by the Board means that state water resource policy will provide an equal opportunity to plan and implement those projects and programs designed to meet the needs of all water use functions. Where competition exists, the decision as to which water use will be met, will be made after a full evaluation of all adverse and beneficial effects. The efficient use of water, insofar as technologically and economically feasible, must be incorporated as part of the design and operation of all water resource projects and programs.

In the adoption of the water resource policy expressed by this objective, the Board considered the following:

1. The definition of the state water policy as expressed by the objective is compatible with an interpretation by the Idaho Attorney General of the meaning of "beneficial use" as contained in the Constitution and Idaho Code. (Attorney General's Opinion of January 12, 1970.)

"First, the language of the above section (Article XV, Section 3) of the (Idaho) Constitution is not restrictive in its reference to the various uses named. The language which follows provides a designation of preference between four uses: domestic, agricultural, manufacturing, and mining. The preference in one use over another enables the holder of a more preferred use to condemn a lesser preferred use.

"This writer (the Attorney-General) knows of no decision by the Idaho Supreme Court construing this section of the Constitution as a limitation upon the various uses to which water may be applied. It is also important to note that Idaho Code, Section 42, 101, in declaring the waters of the state to be public waters, provides that they may be appropriated for "any beneficial purpose." Hutchins, in his work on the Idaho Law of Water Rights, states as follows:

"The water-rights statute provides that the appropriation must be for some useful or beneficial purpose, without placing any limitation upon purposes that would be considered useful or beneficial . . ."

"Second, the framers of the Constitution during the discussions in reference to Article XV, Section 3 of the Constitution, did not infer that this section was to be a limitation upon the particular uses to which water could be applied . . ." (Attorney-General 1/12/70).

2. Maximum benefit for the people of Idaho can best be achieved through a more liberal interpretation of the terminology "beneficial use of water." Conditions and events which shaped

historic water resource projects and programs are substantially different today and can be expected to change even more in the future. A sound water resource policy must recognize this fact and provide a basis for comprehensive planning for all water needs as part of a State Water Plan.

3. Inefficiencies in water use which now exist must be overcome if the public is to achieve maximum benefit from use of water and related land resources.

4. While inefficiencies in water use which exist are often understandable and even justified when considering the conditions and events which shaped their original diversion, steps must be taken to overcome this waste of a natural resource.

5. There should be no excuse for gross inefficiencies in water use in future projects and programs. By careful review and evaluation of the design and operating criteria proposed for all new projects and programs, the Board should act to eliminate practices which promote inefficient water use.

The water resources of Idaho are held in trust by the state for the use by and benefit of present and future generations. All water use needs should be considered equally in the preparation of the State Water Plan.



Gamble Lake — Bonner County

Electric energy

OBJECTIVE: The Idaho Water Resource Board adopts as a planning objective, a reduction in the reliance upon imported electric power. To achieve this objective, the state water resource policy is to promote and encourage those projects and programs which provide for the development of new electrical energy and more efficient use of existing energy sources.

The criteria by which projects and programs related to electrical energy usage will be evaluated are:

1. Insofar as possible, projects and programs must be designed and operated to encourage efficient use of electrical energy supplies.
2. Energy generation sites for hydroelectric, thermal, geothermal, pumped-storage, and nuclear power facilities are to be identified; and justification must be shown for projects and programs which do not provide for optimum utilization of these resources.
3. The full beneficial and adverse social, economic, and environmental consequences of projects and programs designed to increase electrical energy supplies must be fully identified in any proposal seeking Board approval or concurrence. This is to insure that decisions are made with full awareness of all impacts and tradeoffs among water uses.

DISCUSSION: The adoption of this objective means that state water resource policy will be directed toward producing within the state sufficient power to meet the state's electrical energy

needs. As a necessary adjunct toward achieving this objective, the Board recommends the establishment of a state energy facilities siting program.

The decision by the Board to seek a reduction in reliance upon imported electrical energy was based on the following factors:

1. In 1972, 30 percent of the electrical energy consumed in Idaho was supplied from out-of-state.

2. The average per capita consumption of electrical energy in Idaho has increased dramatically from 1738 kwh (kilowatt-hours) in 1945, 9332 kwh in 1963, to nearly 14,900 kwh in 1972.

3. Total electric energy consumption increased from 6.2 billion kwh in 1962 to 11.178 billion kwh in 1972 or an increase of 80 percent.

4. Installed capacity for electrical energy production in 1972 was 1,265,000 kw. The average energy production is 75 percent of the installed capacity which would give a total average energy production of 948,750 kw. Current projections of average annual electric energy needs in Idaho are 1.781 million kw in 1980, 4.069 million kw in 2000, and 7.016 million kw in year 2020.

5. There is considerable potential for installing additional capacity in existing facilities.

6. At present, all of the major power suppliers within the state are cooperating with power suppliers from the other northwestern states.

7. At present, 100 percent of Idaho electrical energy production is hydroelectric. By 1980, it is estimated that 15 percent will be supplied by thermal plants and by the years 2000 and 2020, the percentage supplied by thermal will increase to 65 percent and 75 percent. After 1990, thermal plants will probably be nuclear powered.

8. The potential for geothermal power production in the state appears to be substantial. A state energy licensing program is needed to insure that development of this natural resource is carried out in such a way as to obtain the maximum benefits for present and future generations of Idahoans.

9. With a change in the production of electrical energy shifting from hydroelectric to thermal, it

is anticipated that changes will be sought in the operation of hydroelectric facilities to more nearly fit a "peaking" load condition. The full environmental, economic, and social impacts of these changes will need to be clearly identified and evaluated to insure that proposed changes are justified and beneficial.

10. Offstream storage sites will be identified and evaluated for possible use in pumpback storage projects. Use of these identified sites for other conflicting purposes must be carefully evaluated since this would mean a loss to the state of potential electrical energy production.

Other states may in the future institute a policy requiring that in-state uses be given preference during energy shortages. Idaho should seek to reduce its reliance upon out-of-state electrical energy supplies. The State Water Plan provides the means for illustrating how this can be accomplished.



An engineer's model typifies a nuclear power plant envisioned as providing Idaho energy in future years; Dworshak Dam (inset) produces electric energy from a site on the Clearwater River.

Environmental quality

OBJECTIVE: The policy of the Idaho Water Resource Board is to maintain, and where possible enhance, environmental quality in Idaho.

To carry out this objective, projects and programs will be evaluated to insure compliance with the following criteria:

1. The environmental effects of any proposed action must be clearly identified.
2. Where adverse environmental impacts occur which cannot reasonably be avoided, compensation or mitigation of the losses should be provided when possible.
3. Projects or programs which unreasonably affect critical environmental areas or conditions identified in basin plans will be considered to be in conflict with state water resource policy.
4. Priority will be given to proposals and programs which will improve existing critical environmental problems.

DISCUSSION: The adoption of this objective means that economic feasibility alone will no longer be considered ample justification for approval of water resource projects and programs. State water resource policy will recognize the public's growing concern over maintaining a quality environment and will act to prohibit

those projects and programs which are not planned to make optimum use of limited natural resources.

The Board in adopting this objective considered the following factors:

1. Idaho has a number of environmental problems resulting from historic actions that did not include consideration of the environmental impacts. Examples of this include building of cities upon flood plains, and pollution of water sources. These conditions should not be allowed to occur in the future.

2. Ignoring environmental quality impacts in the past has resulted in urbanization of prime farm lands, over-development of prime recreational areas, poorly planned developments around lakes, reservoirs, and along rivers and streams, and losses of fish and wildlife. These losses could have been avoided or at least minimized with proper planning.

3. Serious air and water problems are present in some areas and adverse environmental quality trends are apparent.

4. The National Environmental Policy Act requires that all federal or federally assisted projects and programs take environmental factors into full account in all planning and decision-making.

Environment constitutes the totality of surroundings: the physical, biological, cultural and psychological factors which affect health, senses and intellect. It comprises the sum total of the eco-systems: air, water and land. State water policy will be directed toward insuring that environmental quality is fully recognized.

Priest Lake — increasingly popular as a resort area in northern Idaho, affords ideal fishing and recreational activities.



Erosion and sedimentation

OBJECTIVE: The policy of the Idaho Water Resource Board is to insure that projects and programs adequately consider their effects with regard to the erosion and deposition of soil.

The criteria by which the Board will evaluate projects and programs as to compliance with the objective are as follows:

1. Proposed new water resource developments must clearly identify expected rates of erosion or deposition of soils and include management programs to minimize those losses. Where management practices are not considered feasible, the impacts associated with not including these practices in any plan must be identified.
2. Priority will be given to identification of alternatives which provide for rehabilitation of lands and waters that now suffer significant erosion and sedimentation damage.

DISCUSSION: The adoption of this objective by the Board will mean that all projects and programs will be evaluated to determine if applicable soil conservation practices are included. These practices must be included as part of any proposal; and the environmental, economic, and social impacts must be clearly identified. In

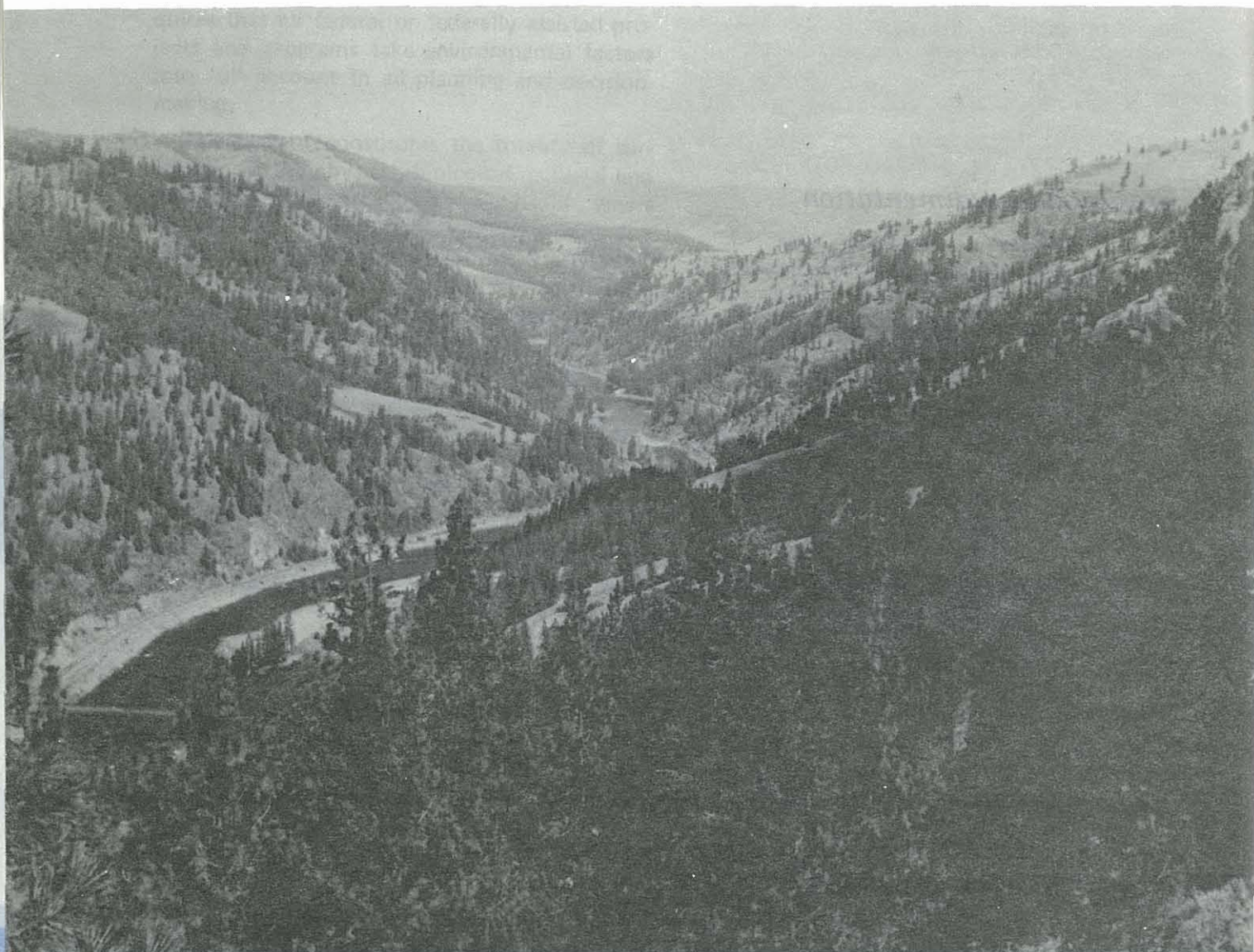
those instances where it is determined that inclusion of soil conservation practices is not justified, the basis for this determination must be shown.

The factors considered by the Board in adoption of this objective are:

1. The erosion and deposition of soil is a critical problem in Idaho. These adverse effects on the state's natural resources (land and water) should be controlled as soon as possible. The estimated damage in southern Idaho alone is about \$6 million annually.

2. There is a direct relationship between erosion and sedimentation and productivity of the watershed. Adequate land management practices and implementation of watershed treatment programs would eliminate the need for some costly structural measures and prevent environmental damage.

3. Soil erosion causes damage to other resources when it is waterborne and deposited over fish spawning beds and wildlife habitat areas; and adversely affects water quality. It often



The Clearwater River between Greer and Orofino flows through rugged, timbered terrain, canyons and narrow valleys on the western side of the Bitterroot Mountain range.

causes a need for costly channel and lake rehabilitation.

4. Material eroded from lands in urban areas is often deposited on developed areas at lower elevations, and the cost of removing sediment from streets and drainage systems can be substantial.

5. Programs designed to achieve the best use and conservation of water and land resources can help to restore and rehabilitate watersheds. These programs involve practices to (1) reduce

the amount of waste water return; (2) maintain and improve the soil structure; (3) increase the soil cover; (4) stabilize gulley and sheet erosion; (5) reduce tillage of easily eroded lands; (6) control massive runoff; and (7) match land use with soil capability.

Responsibility for land management must carry with it a goal of restoration and sustained yield. This objective provides for a water resource policy which will meet that goal.

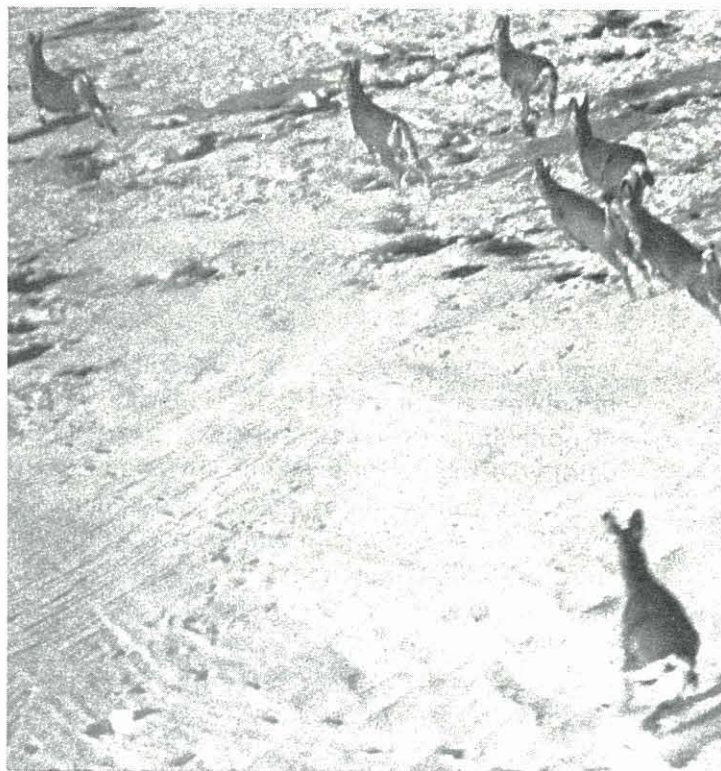
Fish and wildlife

OBJECTIVE: The policy of the Idaho Water Resource Board is to give equal consideration to the needs of fish and wildlife in any project or program designed to promote the conservation, development, and optimum use of the state's water resources. The Board recognizes that fish and wildlife are important elements of the state's economy and quality of life and will recommend stream maintenance flows in the Basins Reports.

The criteria by which projects and programs will be evaluated as to their impacts upon fish and wildlife are:

1. The beneficial and adverse effects upon fish and wildlife must be clearly identified as part of any project or program proposal.
2. Provision for the mitigation of adverse effects upon fish and wildlife and enhancement opportunities must be included as part of the project or program proposal including identification of long-term management responsibilities.

DISCUSSION: The adoption of this objective by the Board means that water uses for fish and wildlife will be given equal consideration in the planning and decision-making process along with all other water use functions. In the past, the impacts of water resource projects or programs upon fish and wildlife were often totally ignored or given only cursory treatment. The adoption of this policy by the Board will insure that the effects of any proposal upon fish and wildlife are identified and considered in the decision-making process.



Mule deer follow the leader across a snow-covered Idaho ridge.

The Board in adopting this objective considered the following factors:

1. As part of the planning program of the Board, fish and wildlife habitat, particularly with respect to endangered species, existing fish species, migration routes, and critical wintering and nesting areas, are being identified and will be available for use in planning for water resource projects and programs.

2. Fish and wildlife are among the state's best known assets and are natural resources which are affected by management decisions regarding the state's water resources.

3. Idaho has an environment conducive to an abundant wildlife and fish population. With 69 percent of the state in public ownership, large quantities of land are available in relatively undisturbed status for wildlife.

4. Dams and reservoirs have significantly reduced fish and wildlife migration.

5. The impact of many water development projects upon the habitat of fish and wildlife has often occurred as an unplanned side effect.

6. Pressure upon the state's fish and game resources will continue to increase as the state and national populations increase. As food, fiber and energy needs of the nation become more acute, there will be pressures to utilize more lands for those purposes at the expense of wildlife habitat.

The fish and wildlife resources are a vital part of Idaho's economy and environmental quality, and must be protected from needless degradation. Through this objective, state water policy will be directed toward meeting that responsibility.

Canada geese fly out of the Snake River Hells Canyon. Mallard ducks and Canada geese migrate through the Idaho flyway.



Fish-farming (Aquaculture)

OBJECTIVE: The policy of the Idaho Water Resource Board is to support continued growth of the aquaculture industry.

The criteria by which projects and programs designed to stimulate new development will be evaluated are as follows:

1. Priority will be given to projects and programs designed to achieve increased production by more efficient utilization of existing water supplies.
2. The economic, environmental, and social impacts of projects and programs must be clearly identified. Mitigation of adverse environmental impacts must be provided, if technologically and economically feasible.

DISCUSSION: The adoption of this objective means that projects and programs designed to achieve growth of the aquacultural industry are believed to be in the best interests of the people of Idaho. The Board will lend support to these efforts when it can be demonstrated that the environmental, economic, and social beneficial effects outweigh the adverse effects. This will mean that all beneficial and adverse effects must be clearly identified as part of the design and operation of any proposed project or program. Conflicts between water uses for aquaculture and other water uses can be expected. An evaluation of the tradeoffs between meeting water

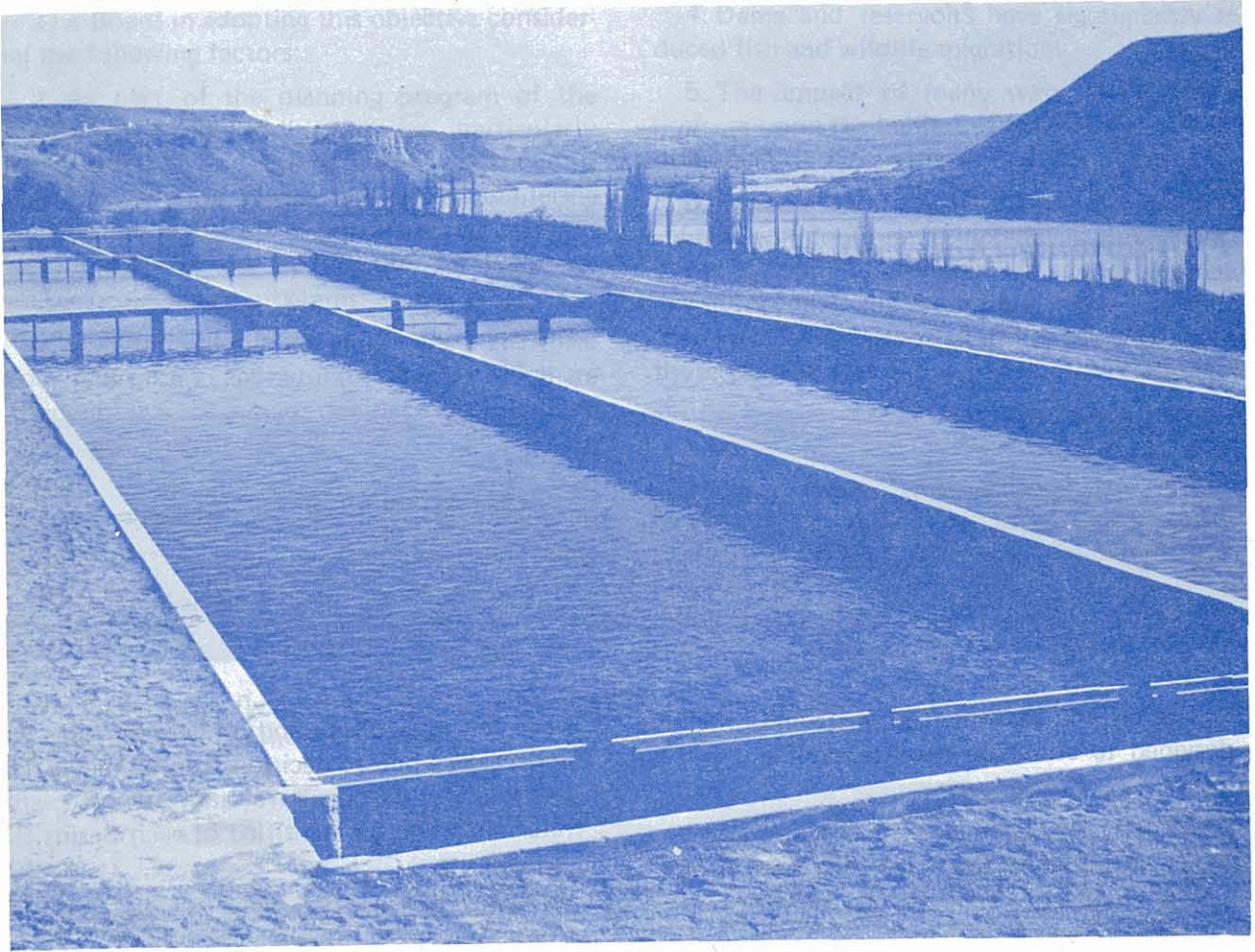
needs for aquaculture and other water uses will be necessary before decisions can be made. The potential for aquaculture and the associated water need will be identified in each Basins Report.

The Board in adopting the objective considered the following factors:

1. The Board believes that the aquacultural industry is economically beneficial to the welfare of the state.

2. This industry is the second largest animal protein producer in the state and is growing in importance. Reported statewide production in 1972 totaled 16 million fish for release by three national hatcheries and 8 million fish from state Fish and Game Department hatcheries. Private commercial sales of 27.4 million pounds of trout and approximately 75,000 pounds of catfish were reported in 1971.¹ Income from commercial sales is estimated at \$35 million during 1972.

¹ A Survey of Fish Health Management in Idaho; George W. Klontz, Professor, Fisheries Management, University of Idaho.



Trout-rearing ponds located near the Snake River depend upon spring-water flowing from the Snake Plain aquifer.

3. The aquaculture industry is unique in that very little water is consumptively used. Total water used in production, however, is substantial and estimated to be 2.4 million acre-feet per year (measured at the point of discharge). Commercial use accounts for about 88 percent of the total use.

4. The industry utilizes the natural outflow from the Snake Plain aquifer as a supply source since it provides extremely favorable water quality and temperature conditions. Projects or programs which affect this supply source must be carefully evaluated since they could adversely affect the industry. Examples of this include re-

charge and/or pumping from the aquifer; the practice of disposing atomic and chemical wastes over the aquifer; and wastewater injection into the aquifer.

5. Proposals have been made to preserve some of the springs in their natural settings. This would conflict directly with the use of this supply for the aquacultural industry.

The Board will identify and evaluate in the basin plans all alternative uses for the water supply of the Snake Plain aquifer. Conflicts will be identified and tradeoffs between competing water uses evaluated. This will provide the mechanism for decisions as to which water use will be given preference.

Flood damage reduction

OBJECTIVE: The Idaho Water Resource Board adopts as a planning objective the preference of management over structural alternatives in reducing or preventing flooding damages.

In recognition of this preference, elements of the state water planning program will consider the following alternatives:

1. Land use regulation and management in identifiable flood plains to prevent uses incompatible with known flood potentials.
2. Improved operation of existing publicly controlled storage reservoirs and whenever possible, coordinating operation of privately controlled reservoirs to reduce peak flood flows.
3. Improved upstream watershed management practices.
4. When other alternatives do not provide sufficient protection to existing developed areas or where such alternatives are not practical, construction of flood flow retention and conveyance structures will be considered.

DISCUSSION: The adoption of this objective means that non-structural alternatives for reducing flood damages will be given preference over structural alternatives such as dams, levees,

or channelization projects. This objective was adopted after considering the following information:

1. Even with large expenditures for structural facilities, damages continue to increase. In 1967, annual flood damages in Idaho were estimated at approximately \$1.8 million. If development continues to occur as it has in the past, estimates are that annual flood damages could be in excess of \$4 million by the year 2000 (1967 price levels).

2. Most flood prevention structures are designed to withstand a flood flow of a certain frequency. The construction of these facilities, therefore does not mean that flooding will not occur. The expansion of development in flood plains protected by structural measures results in increased damages when floods occur which exceed the design frequency.

3. Amendments to the federal Flood Disaster Protection Act require that local units of government zone and control flood prone areas in order to be eligible for most federal assistance programs, including mortgage loan insurance. These amendments and the penalties involved

for non-compliance will significantly affect state and local practices.

No structure can be built that will insure 100 percent protection. An alternative is to provide sufficient space in the flood plain through which floods can pass without inflicting great damages.

The northern Idaho Panhandle suffered severe flood damage in January 1974. One of the overflowing rivers, the St. Joe, is viewed from above Riverdale looking southeast.



Food and fiber (Agriculture)

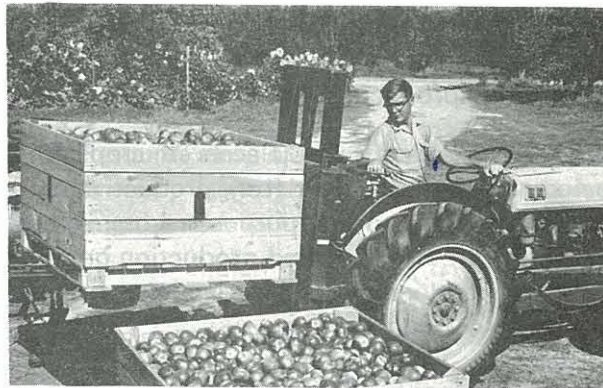
OBJECTIVE: The policy of the Idaho Water Resource Board is to seek an orderly growth of agricultural production in the state at a rate sufficient to maintain the state's current share of the national and international market.

The criteria by which new development will be judged as to whether there is compliance with state water resource policy are as follows:

1. The economic, environmental, and social impact of land use changes affecting agriculture must be clearly identified.
2. Priority will be given to projects and programs which provide for increased production from existing farm lands and grazing lands through increased efficiency in water and land management.
3. Priority will be given to projects and programs which provide adequate water supplies to water-short lands.
4. Priority will be given to projects and programs which provide for more intensive utilization of dryland cropland.

DISCUSSION: The adoption of this objective means that an increase in agricultural production will be actively sought and provided for in the state water plan. If the birth rate of the 1960s continues, population will double by 2020; and demand for food and fiber is expected to double accordingly.

The increase in agricultural production can be realized through the implementation of projects and programs which (1) increase production from existing croplands; (2) provide for development of new croplands; or (3) some combination of the two. It is mandatory that state programs, whenever possible, discourage land use changes which cause a net decrease in the productive capacity of the agricultural industry. It is becoming increasingly difficult to replace lands lost from production to non-agricultural uses.



An irrigated apple orchard yields its fruit. The widely varied Idaho climate fosters growth of many food products.

It is not envisioned that the increase in agricultural production will occur uniformly among the hydrologic planning regions. The resource *potential and desire* by local people for increased production will vary among the regions. The purpose of the basins plans is to identify the more likely areas in each planning region where increased agricultural production could occur taking into consideration the resource potential and the desires of the local people.

The Board chose this objective after considering the following:

1. Agriculture is the major industry of the state and provides an important share of the nation's food basket primarily through irrigated cropland.

2. Production of food by irrigation is highly feasible as evidenced by the fact that Idaho is first among the states in potato production, second in sugar beets, tenth in wheat, 21st in beef, and 27th in dairy products.

3. To retain the state's ranking in production, which in turn will help maintain the state's economy, will require an increase in production, comparable to increases in national and international consumption.

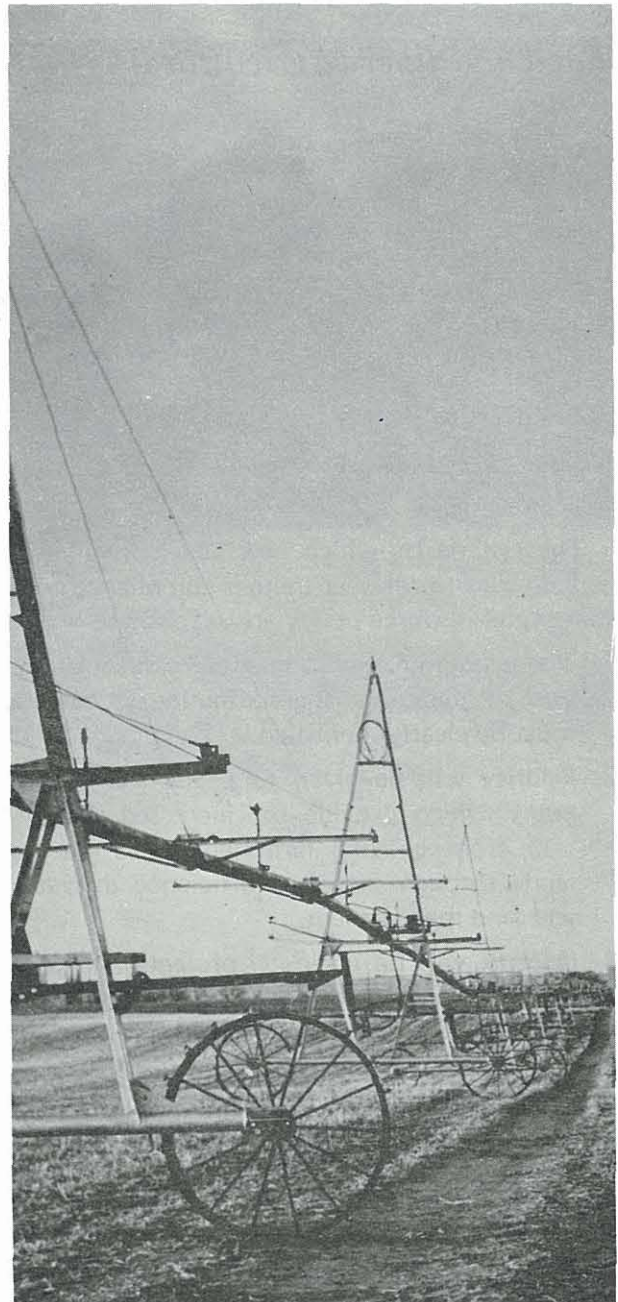
4. The potential exists, through available land and water, to provide for an increase in agricultural production at a rate greater than necessary to maintain the state's current share of the total market.

5. There is believed to be general support by the people of the state for an orderly increase in agricultural production.

6. Approximately 6,000 acres of cropland is being removed each year from productive capacity for non-agricultural purposes. Loss of these lands will require increased production on other lands or development of new lands to maintain the state's agricultural base.

The Board appreciates fully the necessity for minimizing adverse environmental, social, and economic impacts which might result from the implementation of state water resource policy

by this objective. Consequently, the Board will insist that all impacts be fully displayed for any project or program identified as part of each basin plan. In this manner, it is believed that necessary and sound decisions can be made by the local people, state, and federal decision-makers.



A self-propelled sprinkler irrigation system stands ready for the busy summer season.

Indian lands and related water resources

OBJECTIVE: The Idaho Water Resource Board adopts as a planning objective the protection of the natural resources and community environment of Indian reservations in Idaho. To achieve this objective, the state water resource policy is to cooperate with the Indians and tribes to identify and inventory their resources as a first step toward formulation of a resource plan.

DISCUSSION: The adoption of this objective means that the water needs identified by the Indian tribes will be given full consideration in the formulation of basins plans. Any conflicts between the resource plans adopted by the Indian tribes and the basins plans will be clearly identified for the benefit of local, state, and federal decision-makers. The policy of the Board is to encourage a close working relationship with the Indian tribes so that their input can be incorporated in the state water planning process.

The decision by the Board to adopt this objective was based on the following factors.

1. Although there have not been any major legal problems to date with regard to disputes between Indian water rights and water rights granted by the state, problems may occur in the future as competition for water resources increases. Future problems can be minimized through cooperative planning efforts.

2. Indian tribes of Idaho recently began to conduct studies and prepare water inventories. Most tribal councils have retained consulting

services to assist them in preparing comprehensive framework plans for their reservations, and in determining ultimate water requirements.

3. On the Fort Hall Reservation in eastern Idaho, it appears that there are over 100,000 acres of land having a potential for irrigation. There are also lands susceptible to irrigation within the Coeur d'Alene Reservation in northern Idaho and the Duck Valley Reservation in southwestern Idaho.

4. All of the reservations have water uses other than irrigation for which Indians may choose to develop.

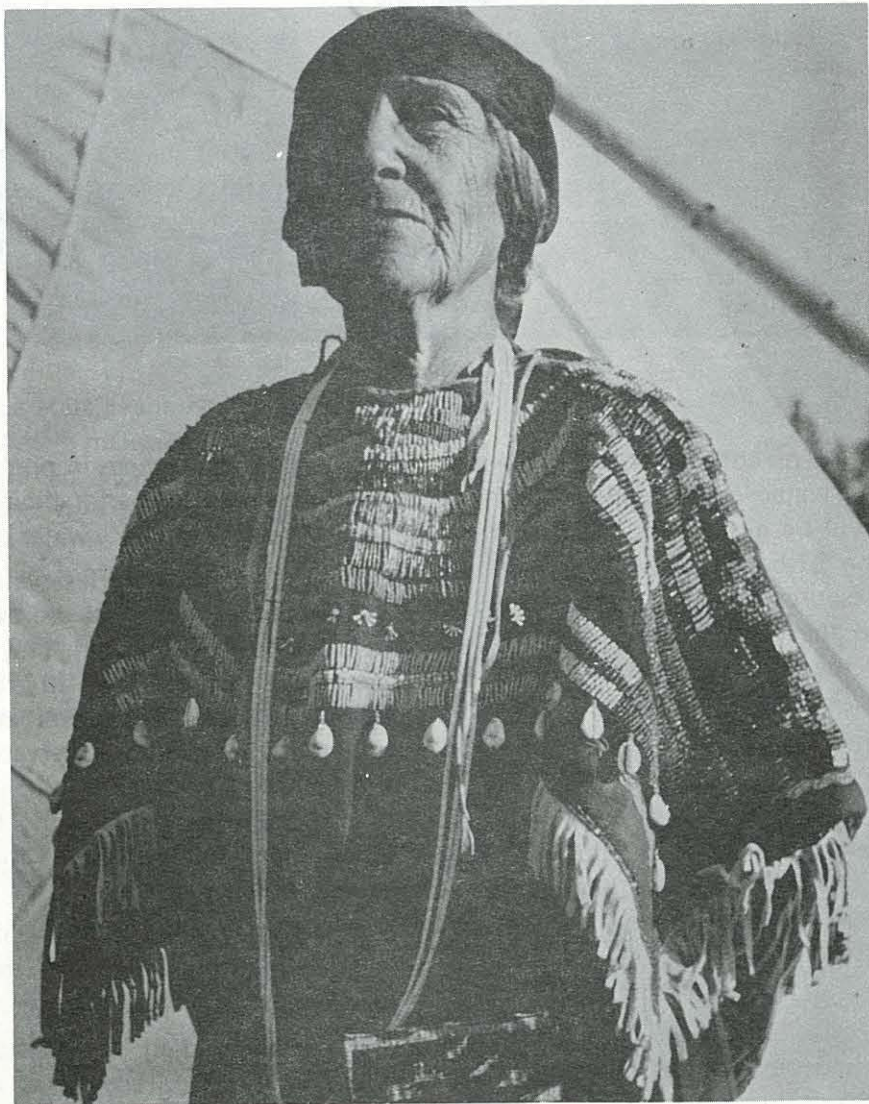
5. Resource development on the reservations has generally lagged behind that on lands surrounding the reservations.

6. Certain Indian water rights reserved by treaty have been recognized through Federal court decisions. The first such decision, the case of Winters (a Sioux Indian) vs. the United States of America in 1908, the Supreme Court found in favor of Winters, saying: "We are of the opinion that . . . when the Indians made the treaty

granting rights to the United States, they reserved the right to use waters . . . at least to an extent reasonably necessary to irrigate their lands. The right so reserved continues to exist against the United States and its grantee as well as the state and its grantees." This case originated in Montana, but the final decision was reached by the U.S. Supreme Court and became the basis for what is now known as the "Winters Doctrine" of Indian water rights. Other more recent cases have supported the theory behind

this doctrine. This doctrine may have widespread implications for planning and development of the state's water and land resources because water now appropriated under state law as well as future water uses may conflict with it.

7. Through a cooperative working relationship with the Indian tribes, water resource projects and programs which provide the opportunity for both Indian and non-Indian needs can be better evaluated and incorporated into plans for the reservations and the State Water Plan.



Nez Perce matriarch wears a handsomely beaded costume of shells, quills and beads carrying on the traditions of Talmaks (the Indian camp meeting near Craigmont).

Interbasin water transfer

OBJECTIVE: The Idaho Water Resource Board adopts as a planning objective, opposition to interstate transfer and diversion of water from Idaho.

The Idaho Water Resource Board does recognize that in order to meet the future water needs of the state, interbasin transfers may be necessary and desirable within the state, and with bordering states subject to the following criteria:

1. Transfer of water from one basin to another to meet water needs will be considered after a determination is made that adequate water cannot be obtained for such uses from within the basin, including water gained by more efficient use of existing resources.
2. Water will not be transferred from one basin to another until the future water needs of the basin-of-origin are identified and a determination made that sufficient amounts of water are available within the basin-of-origin in excess of those needs. However, transfers may be approved on an interim basis with recall provisions to the area of origin when needed.
3. Investigation of any transfer shall fully identify all social, environmental and economic consequences of such proposal, both in the exporting basin and importing basin.

DISCUSSION: This objective as adopted means that any diversion of water from one basin to another must be fully justified based upon both water needs and water availability. Prospective water users must first take all steps possible to develop usable supplies from within their own basin. The objective recognizes protection of the present and future water needs of the basin-of-origin. The objective is adopted after considering the following information:

1. Over 17 proposals have been advanced in recent years to divert water from the northwest or Canada to the southwestern United States. Eleven of these would either utilize waters flowing in or from Idaho or would have conveyance facilities within Idaho. The economic, social, or environmental feasibility of those proposals have not been developed.

2. In 1968, as part of the Colorado River Basin Project Act, Congress prohibited federal studies of importation of water to the southwest for a period of 10 years. That moratorium expires in 1978. Southwest interests continue to seek studies of alternatives for importation of water from the northwest. Added pressure will undoubtedly occur when the moratorium expires.

3. Development of coal and oil shale deposits in the Colorado River states will increase the desire of Colorado River interests to gain additional water supplies.

4. The declaration by Congress that the obligation to supply Mexico water pursuant to the Colorado River treaty is a national obligation rather than solely a Colorado River basin obligation, will add support to diversion of waters from other regions.

5. Interbasin diversions within Idaho have been utilized since the early 1900s to help meet the state's water needs. There are at least six small interbasin water transfers in operation in Idaho. These are primarily short distance canal

extensions and provide sufficient water for small areas. An example of this type of diversion is from Payette River to the Boise River Basin as part of the Black Canyon Project. Present water resource development project proposals include interbasin diversions as an integral part of the development plans.

6. Diversion of water from one basin to another can have both beneficial and adverse social, environmental, and economic consequences.

7. Interbasin diversion of waters is a recognized legitimate alternative when sufficient water exists in an exporting basin for both its own future needs and those of the importing basin. Such transfers however should not take place until the full range of impacts are displayed.

Black Canyon Canal, Payette Division, Boise Project, Idaho, serves lands in the Boise River drainage with Payette River water. The canal (at left) is the source of water for the Payette Valley orchards and of the pumping facilities (upper left) discernable only as a faint line.



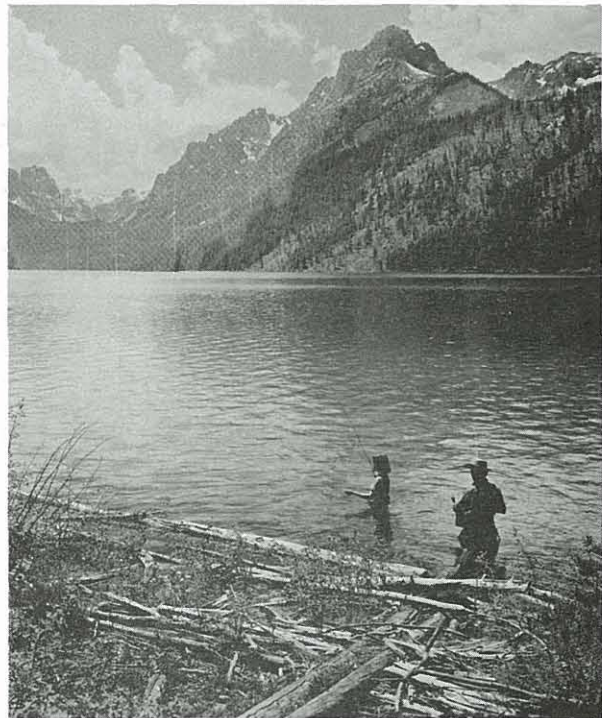
Recreation

OBJECTIVE: The policy of the Idaho Water Resource Board is to support those projects and programs which are designed to protect and enhance recreational opportunities in Idaho.

The criteria by which the Board will evaluate water resource proposals which affect recreational uses are:

1. All new plans submitted to the Board, and Board sponsored programs, must include an evaluation of opportunities for maintaining and/or enhancing recreation. The environmental, economic, and social impacts must be clearly identified in the proposal.
2. Priority will be given to projects or programs which provide for additional public access at existing facilities.
3. All recreational plans must include adequate provisions for water supply and waste disposal.

DISCUSSION: The adoption of this objective by the Board means that the Board recognizes the need for protecting and enhancing recreational opportunities, and that all projects and programs must include consideration of this use as a basic purpose.



Idaho residents rate fishing as a preferred recreational activity.

The decision by the Board to adopt this objective was based on the following factors:

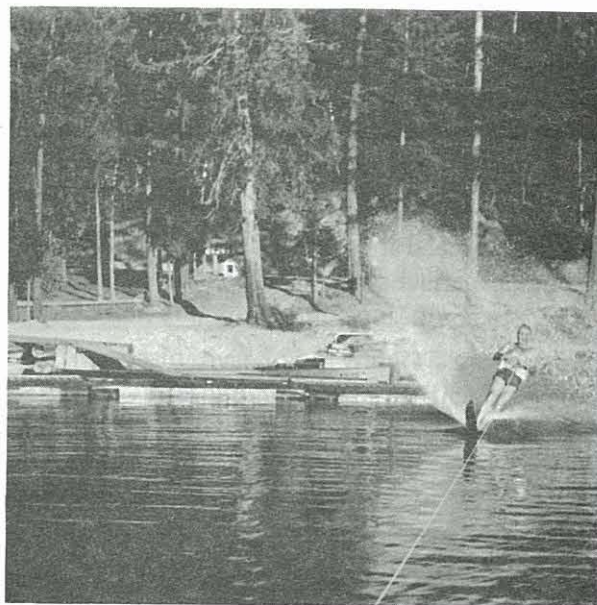
1. The state's water resources provide a unique contribution to recreational opportunities in Idaho, supporting both resident use and an economically valuable tourist market.

2. The recreational industry is one of the fastest growing industries in the state.

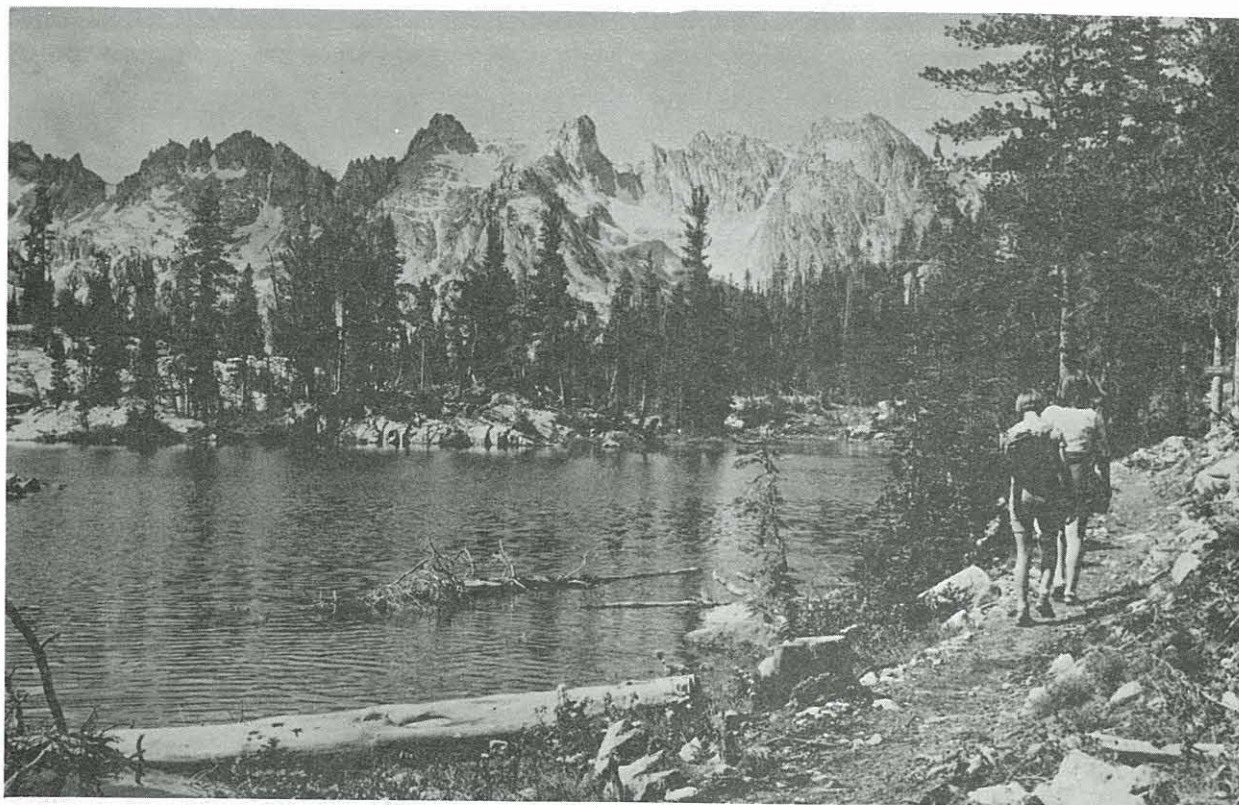
3. Access and water quality determine the quantity and type of usage as well as do facilities and distance from urban centers.

4. Recreational use of waters is expected to increase more than four times by the year 2020.

The people of Idaho place a high value on the availability of varied and quality recreational opportunities. Since water provides a great deal of the recreational opportunities, it is essential that this need be fully considered in the formulation of basin plans.



A water-skier enjoys throwing a high rooster tail on his slalom ski on Priest Lake at Indian Creek campground.



Hikers trail around Alice Lake miles from civilization in the spectacular hinterlands of the new Sawtooth National Recreation Area and Wilderness; Alice Lake is just over the Galena Summit from Sun Valley.

OBJECTIVE: The policy of the Idaho Water Resource Board is to actively promote state control over the use and conservation of Idaho's water resources. As a positive means to help resolve the question of federal versus state jurisdiction of water uses, the Board supports the proposal for enactment of federal legislation which would require all federal rights and responsibilities to be clearly identified. This should be done in cooperation with state agencies and the effects clearly identified in the Basins Reports. Board-proposed projects and programs, and those brought to the Board for approval or concurrence, will be evaluated as to their effects on maintaining a strong position with regard to state control of all water uses.

DISCUSSION: The adoption of this objective by the Board means that state water resource policy will be directed toward maintaining a leadership role in the decision-making process affecting natural resources. Projects and programs brought to the Board will be required to identify the effect, if any, approval by the Board would have with regard to this issue. Approval of projects and programs will be denied if it can be demonstrated that they would adversely affect Idaho's interests in this area.

The Board chose to adopt this objective after full consideration of the following factors:

1. The federal government has played a major role in the development of Idaho's water resources. The role of the federal government has, however, diminished considerably insofar as new

development is concerned, and it is anticipated that it will become even less significant in the future.

2. The right of citizens of Idaho to use the state's waters for beneficial purposes is guaranteed by the State Constitution and by state laws which provide under what conditions and methods water rights may be established.

3. In the early days of Idaho history, there was limited involvement of the federal government in water right activities that were in conflict with rights established under state law. This is no longer the case as federal rights are now being exerted under the claim of "Federal Reserved Rights" and conflicts between federal and state rights are becoming more numerous. This is of particular concern in Idaho where nearly 64 percent of the lands are in federal ownership.

4. As the competition for use of the water resources increases, conflicts between federal and state interest over water rights will intensify.

5. State interests can best be served by maintaining a strong state role in exercising responsibility for water rights.

The National Water Commission Report called for enactment of a National Water Rights Procedures Act to help resolve the questions of (1) coordination of federal water activities with

state water activities; (2) immunity of the United States from suit in certain kinds of water litigation; and (3) compensation of certain privately owned water rights when taken by the United States under the Reservation Doctrine. The Board views this type of legislation as essential and will cooperate with other states in seeking enactment through organizations such as the Pacific Northwest River Basins Commission, Western States Water Council, and Interstate Conference on Water Problems.

The capitol is viewed from Steunenberg Park in the downtown Boise area. The capital city lies near the foothills in the Boise River valley.



Wild and scenic rivers

OBJECTIVE: The policy of the Idaho Water Resource Board is to support the concept of designating selected Idaho river segments as "wild and scenic," through either federal or state programs, so that legal protection can be provided to insure that the rivers and their immediate environments are preserved for the benefit and enjoyment of present and future generations.

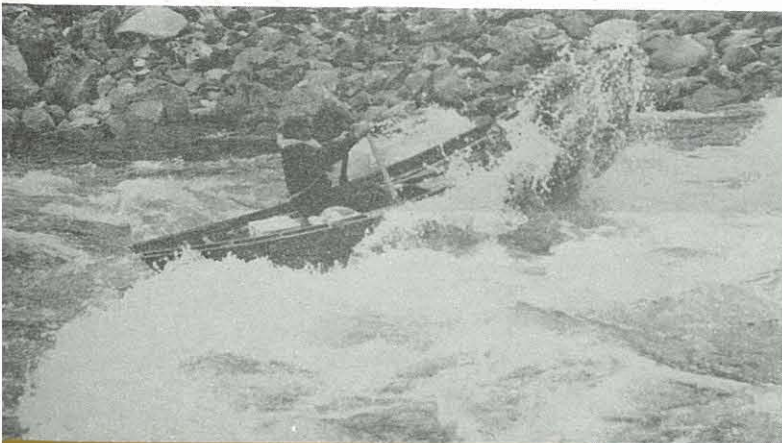
Board position for each proposal will be determined after considering the following:

1. All proposals will be evaluated to determine whether designation and management could be accomplished under a state or local program. Preference will be given to the inclusion of river segments under a state or local program so that control will remain at the state level.
2. All proposals (federal and state) must clearly identify the environmental, economic, and social impacts.
3. An analysis of the benefits and costs associated with the operation and maintenance of the proposal must be included.

DISCUSSION: The adoption of this objective by the Board means that while the Board favors the concept of including additional river segments in a "wild and scenic" program, it will give preference to non-federal classification over federal classification. This is of particular significance since the main stem of the Salmon River and the St. Joe River have been recommended by the Forest Service for inclusion in the national wild and scenic rivers system. Studies are underway on the Bruneau River, Priest River, and Moyie River and Board action will be required in the near future.

Some of the factors considered by the Board in adopting this objective are:

1. The majority of the people of Idaho support the establishment of a state program so that control will remain at the state and local level.
2. There are numerous rivers in Idaho that have great scenic beauty and should have some form of protection.



3. Comprehensive impact studies should be made of presently designated national wild and scenic rivers in Idaho to evaluate the environmental, economic, and social impacts.

4. Questions have been posed regarding the state's rights and authority relative to federal wild and scenic rivers designated in Idaho. The federal Wild and Scenic Rivers Act appears to provide protection of the state's jurisdiction

over water and rights with respect to the beds of navigable streams. Analysis of the Act, however, points out several areas of concern and possible problems.

5. If a river or a river segment is classified as part of the federal system, it is unclear as to the impact such designation would have on establishing minimum flows versus upstream development.

The Middle Fork Salmon River glides between canyon walls near Tappan Falls. The river segment is a designated national wild and scenic river.



PUBLICATIONS

- Planning Report No. One — *Idaho Water Resources Inventory*, 1968 (one 600 page volume plus *50-map atlas)
- Planning Report No. Two — *Economic Base Study for Water Requirements*, 1969
Volume I — Employment-Populations — M&I Water
Volume II — Agriculture-Forestry-Mining
- * Planning Report No. Three — *Aquatic Life Water Needs*, 1969
- Planning Report No. Five — *Agricultural Water Needs*, 1971
- Planning Report No. Six — *Electric Power Water Needs*, 1970
- * Planning Report No. Seven — *Navigation Water Needs*, 1970
- Soils Surveys Reports* — 15 Idaho Counties — Cassia, Twin Falls, Minidoka, Bingham, Butte, Bannock, Bonneville, Canyon, Payette, Power, Caribou, Oneida, Bear Lake, Franklin and Owyhee.
- Potentially Irrigable Lands in Idaho* Soils Reports on remaining 29 Idaho counties.
- Potentially Irrigable Lands in Idaho Summary Report Number One* — 30 pages — 1970
- * First Biennial Report — 7/1/67 to 6/30/69
- * Second Biennial Report — 7/1/69 to 6/30/71
- Third Biennial Report — 7/1/71 to 6/30/73
- First Annual Report* Idaho Water Resource Board Revolving Development Fund. July, 1969 — October 31, 1970
- Second Annual Report* Idaho Water Resource Board Revolving Development Fund. July 1, 1970 through September 30, 1971
- Third Annual Report* Idaho Water Resource Board Revolving Development Fund. July 1, 1972 — June 30, 1973
- Fourth Annual Report* Idaho Water Resource Board Revolving Department Fund. July 1, 1973 — June 30, 1974
- * Family Size Farms in Idaho, 1969

- Interim State Water Plan, Preliminary Report, July 1972
- A Survey of Public Attitudes and Opinions on Idaho's Water Resources, October, 1972
- A Survey of Public Attitudes and Opinions on Idaho's Water Resources, December, 1973
- The Potential Impact and Assessment of Mitigation of Swan Falls and Guffey Dams on the Snake River Ecosystem, November 1972
- Crane Falls Project, Feasibility Report, November 1972
- Water: The Heritage of Man, January 1973
- Summary of Public Information Meetings, Interim State Water Plan, March 1973
- Testimony, Comments, Suggestions and Recommendations on Information and Concepts Contained in the Interim State Water Plan, Preliminary Report, June 1973
- * Comprehensive Rural Water and Sewage Studies – 25 Idaho Counties – Adams, Bannock, Bear Lake, Bingham, Blaine, Boise, Bonneville, Canyon, Caribou, Cassia, Clark, Custer, Elmore, Gem, Jefferson, Jerome, Lemhi, Lincoln, Madison, Oneida, Owyhee, Payette, Shoshone, Twin Falls, Washington

MAPS

Irrigated and Potentially Irrigable Lands in Idaho. Size 32" x 50", 1970

PAMPHLETS AND BROCHURES

Your Idaho Water Resource Board (Brochure)

Loans for Water Resource Development – Information Pamphlet #1

The Marysville Project – Information Pamphlet #2

Idaho's Water Resources and The Future – Information Pamphlet #3

Idaho's Living Water – Information Pamphlet #4

*Out of print; usually these publications are available from the Idaho State Library and from Idaho university libraries.